

Application No.: 09/577,932
Amendment Under 37 C.F.R. §1.111 dated December 20, 2004
Response to the Office Action of October 18, 2004

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;

a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads;

a plurality of metal posts each with a first shape and a first size formed on the electrode pads of the redistribution layer, ~~the metal posts being configured to be provided with external connection electrodes; [[and]]~~

external connection electrodes contacting the respective metal posts; and

at least one mark member with a second shape and a second size which serves as an alignment mark located in a predetermined positional relationship with the metal posts,

wherein the mark member is made of the same material as the metal posts; [[and]]

wherein the first shape and the first size are correspondingly different from the second shape and the second size; and

wherein the metal posts have a flat top surface.

Application No.: 09/577,932

Amendment Under 37 C.F.R. §1.111 dated December 20, 2004

Response to the Office Action of October 18, 2004

Claim 2 (Previously Presented): The semiconductor device as claimed in claim 1, wherein the alignment mark has an outer configuration other than a circle.

Claim 3 (Previously Presented): The semiconductor device as claimed in claim 1, wherein a width of the alignment mark measured along a plane parallel to a surface of the redistribution layer is greater than a height of the metal posts.

Claim 4 (Currently Amended): A semiconductor device comprising:
a semiconductor element having a plurality of electrodes;
a redistribution layer having a plurality of conductive patterns which ~~connects~~ connect the electrodes of the semiconductor device to a plurality of electrode pads, each ~~with~~ of the electrode pads having a first shape and a first size and located [[in]] at predetermined positions [[of]] on the redistribution layer; and
at least one mark member with a second shape and a second size which serves as an alignment mark located in a predetermined positional relationship with the electrode pads;
wherein the mark member is made of the same material as the electrode pads; and
wherein the first shape and the first size are correspondingly different from the second shape and the second size,
wherein the plurality of electrode pads have a flat top surface.

Application No.: 09/577,932

Amendment Under 37 C.F.R. §1.111 dated December 20, 2004

Response to the Office Action of October 18, 2004

Claim 5 (Previously Presented): The semiconductor device as claimed in claim 4,
wherein the alignment mark has an outer configuration other than a circle.

Claims 6-12 (canceled):

Claim 13 (Original): An apparatus for fixing a semiconductor wafer by suction,
comprising:

a vacuum chuck table having a porous plate overlaying a plurality of concentric suction
grooves;

a plurality of suction passages each being correspondingly connected to the plurality of
concentric suction grooves; and

each of the plurality of suction passages being connected to more than one hole on the
porous plate;

suctioning device for sequentially introducing a suctioning force into the suction passages
at different timing.

Claim 14 (Currently Amended): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;

a redistribution layer having a plurality of electrode pads and electrical conductive
patterns connecting the electrodes of the semiconductor element to the respective electrode pads;

Application No.: 09/577,932
Amendment Under 37 C.F.R. §1.111 dated December 20, 2004
Response to the Office Action of October 18, 2004

a plurality of metal posts with a first shape and a first size formed on the electrode pads of the redistribution layer, ~~the metal posts being configured to be provided with external connection electrodes; [[and]]~~

external connection electrodes contacting the respective metal posts; and

at least one mark member with a second shape and a second size which serves as an alignment mark located in a predetermined positional relationship with the metal posts;

wherein the first shape and the first size are correspondingly different from the second shape and the second size;

wherein the metal posts have a flat top surface.

Claim 15 (Currently Amended): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;

a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads;

a plurality of metal posts formed on the electrode pads of the redistribution layer;

~~at least one electrode part comprising one of the metal posts and a protruding electrode attached to a top of the one of the metal posts, the protruding electrode and the metal post forming an electrode part; and~~

at least one mark member which serves as an alignment mark located in a predetermined positional relationship with the electrode part, the mark member comprising one of the metal posts but lacking the protruding electrode;

Application No.: 09/577,932
Amendment Under 37 C.F.R. §1.111 dated December 20, 2004
Response to the Office Action of October 18, 2004

wherein the metal posts have a flat top surface.

Claim 16 (New): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;
a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads;
a plurality of metal posts each with a first shape and a first size formed on the electrode pads of the redistribution layer, the metal posts being configured to be provided with external connection electrodes; and

at least one mark member with a second shape and a second size which serves as an alignment mark located in a predetermined positional relationship with the metal posts,

wherein the mark member is made of the same material as the metal posts; and

wherein the first shape and the first size are correspondingly different from the second shape and the second size;

wherein the metal posts have a flat top surface, and

wherein a width of the alignment mark measured along a plane parallel to a surface of the redistribution layer is greater than a height of the metal posts.

Claim 17 (New): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;

Application No.: 09/577,932
Amendment Under 37 C.F.R. §1.111 dated December 20, 2004
Response to the Office Action of October 18, 2004

a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads;

a plurality of metal posts with a first shape and a first size formed on the electrode pads of the redistribution layer, the metal posts being configured to be provided with external connection electrodes; and

at least one mark member with a second shape and a second size which serves as an alignment mark located in a predetermined positional relationship with the metal posts;

wherein the first shape and the first size are correspondingly different from the second shape and the second size;

wherein the metal posts have a flat top surface, and

wherein a width of the alignment mark measured along a plane parallel to a surface of the redistribution layer is greater than a height of the metal posts.

Claim 18 (New): A semiconductor device comprising:

a semiconductor element having a plurality of electrodes;

a redistribution layer having a plurality of electrode pads and electrical conductive patterns connecting the electrodes of the semiconductor element to the respective electrode pads;

a plurality of metal posts formed on the electrode pads of the redistribution layer;

at least one electrode part comprising one of the metal posts and a protruding electrode attached to a top of the one of the metal posts; and

Application No.: 09/577,932

Amendment Under 37 C.F.R. §1.111 dated December 20, 2004

Response to the Office Action of October 18, 2004

at least one mark member which serves as an alignment mark located in a predetermined positional relationship with the electrode part, the mark member comprising one of the metal posts but lacking the protruding electrode;

wherein the metal posts have a flat top surface, and

wherein a width of the alignment mark measured along a plane parallel to a surface of the redistribution layer is greater than a height of the metal posts.